

O-62 (6)**A POMOLOGICAL EVALUATION OF A THICE SELECTED WALNUT POPULATION**

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The Persian walnut (*Juglans regia* L.) is the most important shell fruit species in Hungary. Growing of this species became very popular in the past 10-15 years, today there are 6 100 ha commercial walnut orchards countrywide. The most grown variety is 'Alsószentiváni 117', its growing ratio is approximately 40% in the Hungarian orchards, followed by 'Milotai 10' with up to 73% growing rate. As a part of the walnut breeding program of the NARIC Fruitculture Research Institute, a pomological evaluation of a double selected walnut population was done to select new promising walnut hybrids. The examination was made at the National Agricultural Research and Innovation Centre – Fruitculture Research Institute between 2012 and 2016. The experimental orchard was established by Prof. Péter Szentiványi in 1997, and it contains around 100 different genotypes. The examined hybrids originated from the following combinations: 'Milotai 10' x 'Pedro', 'Pedro' x 'Alsószentiváni 117', 'Alsószentiváni 117 x Pedro'. During the examination period the most important characteristics of the genotypes were examined, such as leafing-out time, blooming time, ripening time and physical parameters of the walnut fruits. Based on our results five genotypes had late leafing-out time, which are ideal for the Hungarian climate conditions. No significant difference was observed during the examination of blooming time and ripening time compared to the standard Hungarian varieties. Based on the results of the measurement of physical parameters all genotypes reached 32 mm fruit size in diameter, which is the requirement of the first grade fruits on the market. The fruit weight and fruit volume values of most hybrids exceeded the results of the control variety 'Alsószentiváni 117'. Only two genotypes reached 50% in kernel rate. Cracking rate determines the percentage of whole and half kernels, 11 hybrids reached the ideal 70% cracking ratio (ratio of halves and whole). Based on the results of this study two genotypes (tree no. V/2/28-30 and tree no. V/3/30-31) were found which had excellent values as a result of all the examinations. Further studies are required to investigate this two promising walnut hybrids.

Keywords: Persian walnut, breeding, Hungary, genotypes,